Inventory of

Federal Energy-Related Environment and Safety Research for FY 1978

Volume III - Interactive Terminal Users Guide

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1.2 Federal Inventory Access . . . . . .
1.3 Scope of Users' Guide. . . . . .
1.4 Inclusion of Projects in FY 1979 Federal Inventory . .

2. Data Base Access Procedures . . . . . .
2.1 Terminology and Conventions. . . . . .
2.2 General Access Procedures. . . . . .
2.3 Logging On and Off the DECsystem-10. . . . . .
2.4 Help for the User. . . . . .

3. System 1022 Commands. . . . . .
3.1 General Command Format . . . . . .
3.2 Command Line Continuations . . . . . .
3.3 Character Strings. . . . . .
3.4 Diagnostic Messages. . . . . .
3.5 Arithmetic Expressions . . . . . .
3.6 Entering and Exiting System 1022 . . . . . .
3.7 Data Base Set Command. . . . . .
3.8 Mapping Command. . . . . .
3.9 INFORM Command . . . . . .
3.10 FIND Command . . . . . .
3.11 SEARCH Command . . . . . .
3.12 SORT Command . . . . . .
3.13 SAVE Command . . . . . .
3.14 TYPE Command . . . . . .
3.15 FORMAT Statements. . . . . .
3.16 REPORT Command . . . . . .

Appendix A. Inventory Questionnaire (FORM DOE/EV-294). . . . .

Appendix B. System 1022 Error Messages . . . . . .

Appendix C. Data Set Attributes. . . . . .

Appendix D. Agency Abbreviations . . . . . .

Appendix E. Example of Terminal Session. . . . . .

Department of Defense
Department of Energy
Department of Health, Education, and Welfare
Department of the Interior
Department of Transportation
Federal Energy Administration
National Aeronautics and Space Administration
National Science Foundation
Nuclear Regulatory Commission
Tennessee Valley Authority
U.S. Coast Guard
U.S. Environmental Protection Agency

The Inventory of Federal Energy-Related Environmental and Safety Research data base has been slightly reformatted from the published document and has been installed on System 1022 at Oak Ridge National Laboratory (ORNL). System 1022 is a generalized data management system created for use on the Digital Equipment Corporation DECsystem-10 computer. The intent of the authors is to provide the unsophisticated user with a fast retrieval capability for personal queries and a limited number of "canned" reports for analysis or planning needs. The Federal Inventory is presently updated annually for publication, but it is hoped that the automated version will be updated at least semiannually in the future.

1.2 Federal Inventory Access

Access to the Federal Inventory can be obtained by contacting:

C. E. Miller
Division of Financial Services
Mail Stop E-201
Department of Energy
Washington, D.C. 20545

Telephone: (301) 353-3199, FTS 233-3199

The phone numbers for dial-up access, an account number, and a security password will be issued. Activity on the system is monitored in this fashion. If during a terminal session the user encounters any difficulty or has questions about query syntax, contact:

Janice F. Barker
Information Center Complex
Oak Ridge National Laboratory
P.O. Box X
Oak Ridge, Tennessee 37830

Telephone: (615) 574-7577, FTS 624-7577

Costs for access are presently assumed by the Office of Environment, Department of Energy. In the future if dial-up use becomes extensive, it may be necessary to implement a cost-sharing system of accounting based on individual account use.

can be obtained from Janice F. Barker at ORNL.

1.4 Inclusion of Projects in FY 1979 Federal Inventory

Persons who would like to have federally funded projects included in the inventory for FY 1979 can obtain survey forms by contacting the Assistant Secretary for Environment, Department of Energy, Washington, D.C. 20545. A copy of the questionnaire for the FY 1978 Federal Inventory is in Appendix A.

2. DATA BASE ACCESS PROCEDURES

2.1 Terminology and Conventions

The following list explains terms and conventions used throughout this manual:

1. data base — a collection of related information arranged into records (e.g., the Federal Inventory data base)

2. record — a collection of related data items which are consistent in format from record to record (Within the Federal Inventory data base each project is considered a record.)

3. attribute — the data items comprising a record (e.g., LOG AGENCY, MONITOR, and FUNDA are attributes within a given Federal Inventory project [record].)

4. ↓ — indicates the carriage return key

5. ↑ — indicates the control key (CTRL) which is depressed and held until a subsequent key is typed (e.g., ↑C or ↑O)

6. type — indicates those portions of the example which the user must

7. upper case — parts of the examples which should be printed exactly as shown

2.2 General Access Procedures

Several steps are involved in accessing the Federal Inventory data base on the DECsystem-10 computer at ORNL. After the user has permissio to access the data base and has obtained the proper project-programmer number, password, and telephone number, the following general steps shou be followed:

1. Dial the ORNL DECsystem 10 computer. (The user must have a compute terminal with an acoustic coupler or data set.)

2. Log into the DECsystem-10 by entering the proper project-programmer number and password.

3. Perform the desired Federal Inventory search and/or reports.

4. Exit from System 1022.

5. Log off the ORNL DECsystem-10.

2.3 Logging On and Off the DECsystem-10

To access the Federal Inventory data base, the user must first log into the DECsystem-10. The terminal transmission rate should be set at either 110 baud (10 characters per second) or 300 baud (30 characters pe second), and the terminal should be set to operate in full duplex mode. After the appropriate telephone number is dialed and the terminal is pro erly connected to the DECsystem-10, the following procedures should be followed:

1. Depress RETURN key.

2. The terminal should type PLEASE LOGIN OR ATTACH and then a period (.). If nothing is typed, type RETURN until a period is printed by the system.

3. After the period, type project-programmer number: xxxx,xx↓.

4. If a valid project-programmer number was entered, the system will type PASSWORD: and wait for the user to respond with a valid pass-

```
.LOGIN↓
JOB 24  UCCND  603  KL10  TTY6/73
#6144,42↓
PASSWORD:  _____↓
```

After entry of a valid project-programmer number and password, the user has successfully logged into the DECsystem-10. Following entry of the password, a list of system-user messages will be printed. Printing of the messages can be aborted by typing ↓O.

In order to log off the DECsystem-10, the user types K/F and a carriage return. The system will print certain user information, including cost of the session. The system will then print a period and the user m either log on again or turn off the terminal and sever the communication connection. It is important to always log off after a terminal session. The following is an example of logging off the DECsystem-10:

```
.K/F
JOB 60, User [6145,45] Logged off TTY54 1335
14-May-79
Saved all files (95 blocks)
CPU Time  = 0.03 Minutes
Con Time  = 0.46 Hours
Kilo Time = 0.00 Hours
Job Cost  = 1.20 Dollars
Prime Rates
```

2.4 Help for the User

Should the DECsystem-10 user need additional help in the procedures previously discussed, the user can type .HELP name↓, where name is an available HELP file name in a given area of interest. For a listing of all the HELP file names available, type .HELP INDEX↓. For log-on and log-off procedures the following HELP files may be useful:

```
.HELP LOGIN↓
.HELP BEGINN↓
HELP JAMA↓
```

System 1022 is desired, the user should refer to the manual *System 1022 - Data Base Management System*.

3.1 General Command Format

System 1022 is designed to accept commands in a natural word-oriente format. The basic command format is:

COMMAND [parameter parameter . . . parameter]

where parameter is a file name, attribute name, etc., depending on the command. Multiple commands may be typed on a single line provided that each command is terminated by a period and a space.

COMMAND parameter. COMMAND parameter.

3.2 Command Line Continuations

Lengthy commands may be continued for succeeding lines by typing a minus sign (-) and carriage return (↓). The system will erase both the minus sign and the carriage return from the command string. The system will request succeeding command lines with a pound sign (#) rather than the asterisk (*). If after typing a multiple-line command the user wish to abort the entire command, this may be done by typing the command #Z. A single-line command may be aborted by typing ↑U. The following is an example of entry of a multiple-line command:

```
* FIND LOG_AGAB EQ -↓
# DOC/ASEA AND MON_AGAB -↓
# EQ EPA↓
```

Actual command entered is

```
* FIND LOG_AGAB EQ DOC/ASEA AND MON_AGAB EQ EPA↓
```

3.3 Character Strings

To enter a character in a command line, enclose the string in singl quotes ('). For example:

with the last character typed. To erase a line of characters the user types: .↓U

3.4 Diagnostic Messages

When a command is entered incorrectly, System 1022 prints a number-coded diagnostic message and repeats the command up to and including the invalid word within the command. The command is then ignored. For example:

```
* PRENT TOT FUNDA
?(CS24) INVALID COMMAND
PRENT
*
```

Typical diagnostic messages the user may encounter in seaching the Federal Inventory data base are listed in Appendix B. A complete set of messages is contained in *System 1022 — Data Base Management System*.

3.5 Arithmetic Expressions

System 1022 arithmetic expressions consist of a combination of nume values, attribute names, parentheses, and the following numeric operator

```
* multiply
/ divide
+ add
- subtract
```

System 1022 evaluates a given arithmetic expression according to parenthetical groups. Within any parenthetical group, numeric operators are evaluated in the order given above — multiply (*) first and subtract (-) last. When operator precedence is equal, the numeric operators are evaluated from left to right. For example, if NUM = 28, the following expression would evaluate as follows:

```
* PRINT (2*3-NUM/(3+4)+5)↓
7
```

Additional information is available from the following Digital Equi ment Corporation manuals: *Operating System Command Manual* (DEC-10-OSCMA-

The Federal Inventory data base is composed of three data sets. A successful log on automatically places the user in the first data set of the Inventory in System 1022. No commands are needed to enter System 10 or to open the data base. After log on the system will respond:

```
SYSTEM 1022A (114-0 BETA VII)
IN DATA SET 1.
*
```

At this point inquiries to the data base can be made.

In order to leave System 1022 and return to the DECsystem-10 monito the user enters the command:

```
* QUIT↓ or Q↓
```

The system will respond with EXIT, indicating the user has returned to the monitor. Care must be taken to always use the QUIT command to exit System 1022.

The system automatically assumes an 80-character-width line size when the user enters System 1022. If the user's terminal has a 132-character-width line size, the width command should be used to specify the line size. The user enters System 1022, exits using the QUIT command, enters the width command, and finally reenters System 1022. The procedure is:

```
SYSTEM 1022A (114-0 BETA VII)
IN DATA SET 1.
* QUIT↓
EXIT
.TTY WIDTH 132↓
.R NEW:1022
```

The user is now back in System 1022 with a 132-character-width line size and can proceed with inquiries to the data base.

3.7 Data Base Set Command

As stated above, the Federal Inventory data base consists of three data sets. Data set 1 contains most of the project identification information, data set 2 is a list of the boxes marked on each questionnaire (Appendix A), and the third data set contains funding data, log and moni

The three data sets are linked together by the log numbers field. All records in all data sets generated from a single questionnaire share the same log number. Thus, for records found in one data set, a related group of records may be found in another data set based on log number values in the first data set. To find a related group of records in a second data base, the mapping command is used. A group of utility routine to perform this mapping has been developed. To map between data sets the user enters the command @M*X* where *X* is the data set number mapped to. The system will respond with the number of records found and the data set number mapped to, for example:

```
IN DATA SET 1.
* @D2↓
IN DATA SET 2.
* FIND K EQ IIA10↓
1892 RECS FOUND.
* @M1↓
1853 RECS FOUND.
IN DATA SET 1.
```

This example shows the command to enter the data set 2 (@D2), a FIND command in data set 2, and a mapping command back to data set 1 (@M1).

3.9 INFORM Command

The INFORM command is used to generate information on the structure and status of the currently selected data base. This command is useful if the user desires to know the attribute names, which attributes are keyed, etc. The general form of the command is:

```
INFORM [ STRUCTURE          ]
       [ ATT Attribute      ]
       [ NAMES              ]
```

where STRUCTURE displays one line of information for each attribute in the data base. The information includes attribute name, attribute abbreviation, data type, keying status, and field size. ATT attribute displays the line from the STRUCTURE describing this particular attribute. NAMES displays a list of attribute names for the data base without additional structure information. To display attributes and the one line of information the user enters:

base by use of special key tables associated with keyed access attribute
The FIND command is restricted to selection criteria using keyed attri-
butes. Refer to the chapter on data base structure or use the INFORM
command for a list of keyed attributes in the Federal Inventory data bas
Searching of nonkeyed attributes is accomplished with the SEARCH command
which is slower since key tables are not used. The general form of the
FIND command is

FIND comparison [logicalop comparison . . logicalop comparison],

where comparison is an arithmetic or logical comparison performed on key
attribute values and takes the form

Keyedattribute relationop value,

where keyedattribute is the name of the keyed attribute on which System
1022 will perform the comparison. Relationop is one of the following
relational operators:

Relational operator	Description
EQ	Is equal to the value
NE	Is not equal to the value
GT	Is greater than the value
GE	Is greater than or equal to the value
LT	Is less than the value
LE	Is less than or equal to the value
BET	Is between or equal to the named value
NBET	Is not between or not equal to the named value
CT	Contains the text string in its value (TEXT attributes only)
NCT	Does not contain text string in its value (TEXT attributes only)

When these operators are used with text values, the comparisons are made
on the basis of alphabetical precedence. For example, BBB is less than
BBC. Note also that lower case characters have a greater value in com-
parison than upper case characters (e.g., b is greater than B).

Logical operator	Description
AND	Finds only those records satisfying both comparisons at once
OR	Finds all records satisfying either comparison
XOR	Finds all records satisfying one but not both comparisons
EQV	Finds all comparisons in which the comparisons are either both true or both false in the same record
NOT	Produces the opposite of the element following it

Any level or grouping of parentheses may be used in the FIND comman
When used without parentheses, the logical operators are evaluated accor
ing to the following precedence:

1. XOR and EQV
2. AND
3. OR

The NOT operator acts only in the relation or comparison immediately fol
lowing it.

The special command FIND ALL↓ can be used to quickly select the entire data base and the special keyword LAST may be used in a FIND command to represent the records found in the most recent FIND or SEARCH command. A third special FIND command is FIND SYSID↓ which selects records by the internal record number assigned by the system to each record Examples of the use of the FIND command in searching the Federal Invento data base follow.

Example of FIND ALL command:

```
SYSTEM 1022A (114-0 BETA VII)
IN DATA SET 1.
* FIND ALL↓
3225 RECS FOUND.
```

```
* FIND CI EQ 'OAK RIDGE'↓
211 RECS FOUND.
* @M2↓
211 RECS FOUND.
IN DATA SET 2.
* FIND LAST↓
229 RECS FOUND.
```

Example 2.

```
IN DATA SET 1.
* FIND ZIP EQ 37830↓
211 RECS FOUND.
* @M2↓
2072 RECS FOUND.
IN DATA SET 2.
* FIND LAST AND KEYFIELD BET IIA1 IIA6↓
112 RECS FOUND.
```

Example of FIND SYSID command:

```
IN DATA SET 1.
* FIND SYSID LT 500↓
499 RECS FOUND.
```

In data set 3 the attribute KEYWORD contains both keywords and fun
ing agencies. The FIND command can be used with the KEYWORD attribute
retrieve records containing a specific funding agency. For example:

```
IN DATA SET 3.
* FIND KEYWORD EQ EPA↓
```

To find a range of funding agencies or to find all records which have
agency values in the KEYWORD attribute, the procedure is:

```
IN DATA SET 3.
* FIND FY78 NEQ '___'↓
3301 RECS FOUND.
* SAVE AG↓
* FIND FILE AG↓
3301 RECS FOUND.
* FIND LAST AND K BET DOE AND EPA↓
```

To find all records which contain character string "OAK" in CITY attrib
the procedure is

```
IN DATA SET 1.
```

ation of these simplified syntax rules, refer to the System 1022 manual

3.11 SEARCH Command

The SEARCH command is generally in the same form as the FIND command however, attributes specified in the SEARCH command can be either keyed o unkeyed. Since key tables are not used, the SEARCH command is considerab slower than the FIND command. Therefore, the FIND command should be used whenever possible. The SEARCH command only searches the records found by the last FIND or SEARCH command entered and, therefore, at least one FIND command must precede a SEARCH command. The general form of the SEARCH command is

SEARCH comparison [logicalop comparison . . . logicalop comparison],

where comparison and logicalop are as described in the FIND command. The following additional relational operators are valid for the SEARCH comman

Relational operator	Description
CT	Contains the character string
NCT	Does not contain the character string

The following are examples of use of the SEARCH command:

Example 1.

```
IN DATA SET 1.
* FIND ALL↓
3225 RECS FOUND.
* SEARCH TYPE CT 'EPA'↓
978 RECS FOUND.
```

Example 2.

```
IN DATA SET 1.
* FIND ZIP EQ 37830↓
211 RECS FOUND.
* SEARCH TITLE CT 'COAL'↓
10 RECS FOUND.
```

Example 3.

```
IN DATA SET 1.
* @D2↓
IN DATA SET 2.
* FIND KEYFIELD BET VB1 VB8↓
2069 RECS FOUND.
* @M1↓
```

The SORT command is used to arrange the order of a group of record selected by the last FIND or SEARCH command. Following a use of the SO command, the PRINT command or report program are normally used to displ the records in sorted order. The general form of the SORT command is

SORT [BY] expression [sequence] . . . expression [sequence],

where BY is an optional word the user may wish to include for clarity. Expression is normally an attribute name but may be a true expression i the sorting situation allows it.

Sequence is a keyword (UP or DOWN) specifying the type of sort. I the sequence keyword is omitted, UP is assumed. The order of the attri butes in the command string specifies the order of the sort. All recor are sorted according to the first attribute, then equal occurrences of the first attribute are sorted according to the second attribute, etc. The following are examples of use of the SORT command:

Example 1.

```
IN DATA SET 1.
* FIND MA EQ EPA↓
641 RECS FOUND.
* SORT PI↓
```

Example 2.

```
IN DATA SET 1.
* @D2↓
IN DATA SET 2.
* FIND KEYFIELD EQ VB1↓
528 RECS FOUND.
* @M1↓
528 RECS FOUND.
IN DATA SET 1.
* SORT AFFIL PI↓
```

3.13 SAVE Command

The SAVE command allows the user to save a system-readable copy of the current record selection group. The copy is stored as a disk file, using the default extension of .DMV. The general form of the command i

SAVE file-descriptor

The file may then be referred to by FILE file-descriptor. This makes i

```
* FIND LA EQ EPA↓
90 RECS FOUND.
* SAVE EPA↓
```

Example 2.

```
IN DATA SET 1.
* @D2↓
IN DATA SET 2.
* FIND K BET VB1 VB8↓
2069 RECS FOUND.
* @M1↓
1038 RECS FOUND.
IN DATA SET 1.
* SAVE GEOTHERMAL↓
* @D2↓
IN DATA SET 2.
* FIND K BET VB1 VB8↓
2069 RECS FOUND.
* @M1↓
1038 RECS FOUND.
IN DATA SET 1.
* SAVE SOLAR↓
* FIND FILE GEOTHERMAL AND FILE SOLAR↓
268 RECS FOUND.
```

If the user has saved files during the session, those files need be deleted before logging off DECsystem-10. To delete files, the use first exits System 1022 and then deletes the files. The sequence for file deletion is

```
* QUIT↓
EXIT
.DELETE *.DMV↓
.K/F↓
```

3.14 TYPE Command

The TYPE command allows the user to display record values to the user's terminal. It can calculate and print standard system function of expressions. The records which the TYPE command will display are records currently selected by the last FIND or SEARCH command. Every record selected will be displayed when the TYPE command is executed. The general form is

f several attributes:

```
IN DATA SET 1.
* FIND MON_AGAB EQ DOE↓
1150 RECS FOUND.
* TYPE LOG_NO MON_AGAB TITLE↓
```

To total attribute values for a selected record group the totals-
ist function is used. This prints the total attribute value once after
l records have been processed by the main-list. The following is an
xample of using the TYPE command to total attribute values:

```
IN DATA SET 1.
* FIND LOG_AGAB EQ 'EPA'↓
90 RECS FOUND.
* TYPE TOT FUND1↓
8098.0000
```

l dollars are given as thousands of dollars; thus, the total for FUND1
the above example is 8098.0000K. The totals-list functions may apply
general attributes by following the function name with the attribute
be evaluated for each record. The available functions are:

Function	Description
MIN	Returns the minimum attained attribute value
MAX	Returns the maximum attained attribute value
MEAN	Returns the mean value over all records of the attribute
TOT	Returns the sum of the value over all records

To control and display attribute values in a more readable manner
an that produced by the TYPE command alone, the user may use the FORMAT
tion with the TYPE command. The general form is:

```
TYPE attribute [FORMAT ---- END]
```

3.15 FORMAT Statements

In the TYPE command the user can specify a format in which data will
output. The specifications employed are in many cases reminiscent of
ose employed in COBOL and FORTRAN. To display the attributes a scrollin
rmat can be used with the general form

```
IN DATA SET 1.
* FIND MON_AGAB EQ 'DOE'↓
1150 RECS FOUND.
* TYPE MON_AGAB TITLE FORMAT S50 END↓
```

The following example may also be used:

```
IN DATA SET 1.
* FIND MON_AGAB EQ 'DOE'↓
1150 RECS FOUND.
* TYPE MON_AGAB TITLE FORMAT A50 10X A60 END↓
```

For more sophisticated FORMAT statements, the user should refer to the manual *System 1022 — Data Base Management System*.

3.16 REPORT Command

Three basic canned reports are included in the system. Each report sorts the selected records by number before displaying the records. Repo one (R1) lists log number, FY 1978 funding level, monitoring agency, and project title for the currently selected set of records. Report two (R2) lists the same items as report one plus the question numbers and percentages from data set two. Report two requires that the user create a SAVE file named "S" in data set two containing the question numbers to be included in the report. All reports print the total FY 1978 funding for th currently selected records at the end of the report. To use the report system, the user enters the command @R*X* where *X* is the number of desired report, for example:

```
* @R2↓
```

A second group of reports is provided for users with terminals havi a line size of 132 characters. These reports perform like the reports described above. To use one of the wide-format reports enter @W*X* where *X* is the number of the report, for example:

```
* @W2↓
```

The following are examples of the REPORT command:

Example 1.

```
IN DATA SET 1.
* FIND LA "DOE/NE"↓
```

TITLE FY78: $330.0

Example 2.

```
IN DATA SET 1.
* FIND LOG_AGAB EQ "DOT/FAA"↓
8 RECS FOUND.
* @M2↓
70 RECS FOUND.
IN DATA SET 2.
* FIND LAST AND KEYFIELD EQ "IIA2"↓
6 RECS FOUND.
* SAVE S↓
* @M1↓
6 RECS FOUND.
IN DATA SET 1.
* @R2↓
POSITION TO TOP OF FORM AND ENTER RETURN.
INVENTORY OF FEDERAL ENERGY-RELATED ENVIRONMENT
AND SAFETY RESEARCH 5/09/1979 PAGE 1

62004  $495.0  DOT
TITLE:  JET NOISE REDUCTION
260  1.00  $495.0

62023  $250.0  DOT
TITLE:  ANALYSIS OF AIRCRAFT EFFECTS
260  .50  $125.0

TOTAL FY78:  $745.0  PERCENTAGE TIMES FY78:  $633.3
```

Example 3.

```
IN DATA SET 1.
* FIND ZIP EQ 37830↓
240 RECS FOUND.
* @M2↓
3111 RECS FOUND.
IN DATA SET 2.
* FIND LAST AND KEYFIELD IIA11↓
7 RECS FOUND.
* @M1↓
7 RECS FOUND.
IN DATA SET 1.
* @R3↓
POSITION TO TOP OF FORM AND ENTER RETURN.
INVENTORY OF FEDERAL ENERGY-RELATED ENVIRONMENT
AND SAFETY RESEARCH 5/09/79 PAGE 1
```

TECHNOLOGIES AND ENERGY FUEL CYCLES;
(2) PERFORM LEAD LABORATORY ASSESSMENT
RESPONSIBILITIES FOR (A) SCENARIO
DISAGGREGATION, (B) SITING, AND (C)
WATER AVAILABILITY ANALYSIS; (3)
IDENTIFY AND ANALYZE

An example of an extensive search of the Inventory data base using st of the commands described above is provided in Appendix E. The arch strategy is:

Find the records in each technology category and save each category as a file.

Compare the files to find records associated with several selected technologies.

Sort the selected records and print selected record attributes.

APPENDIX A

INVENTORY QUESTIONNAIRE (FORM DOE/EV-294)

M DOE/EV-294
8)

FORM APPROVED
OMB NO. 038-R0188

Inventory of Federal Energy-Related Environmental and Safety Research

FY 197

DEPARTMENT OF ENERGY
Office of the Assistant Secretary
for Environment
Division of Environmental Impact

INSTRUCTIONS FOR PROJECT DOCUMENTATION -- INVENTORY OF FEDERAL ENERGY-RELATED ENVIRONMENTAL AND SAFETY RESEARCH

For further assistance contact DOE, Division of Environmental Impacts:
Phone (301) 353-3311 or FTS 233-3311.

SECTION I - ADMINISTRATIVE

A. PROJECT TITLE

1. Project Title

Use official title of project or contract in 25 words or less.

2. Project Control Number

The numerical or letter-number combination that the performing organization uses and recognizes as a unique descriptor of the project. (This number may be one assigned by the monitoring organization.)

3. Date Questionnaire Completed

This date determines the currency of the information being supplied; month and year is sufficient.

B. PROJECT STATUS

1-3. Check the status of the project in FY 1978.

C. PRINCIPAL INVESTIGATOR

1-5. Name and Address

This information identifies the person actually performing the experiment or having direct supervisory responsibility for the project.

6. Performing Organization

The organization that provides the principal investigator with administrative, facility, and/or logistic support. In those areas where a grant or contract is with a single investigator the performing organization should be indicated as Principal Investigator.

7. Principal Investigator's Telephone Numbers

Enter the commercial telephone number and/or the Federal TeleCommunications System telephone number as appropriate.

D. PROJECT MONITOR

1. Monitoring Agency

The Federal Agency having direct contact with the principal investigator and the performing organization. Use appropriate abbreviation at the Departmental level (e.g., DOE, DHEW, EPA, DOA, DOC, DOD, DOI, DOT, NSF, NRC, TVA, etc.).

2. Monitoring Agency Division or Office

Write the complete title of the subunit within the monitoring agency that has cognizance or direct supervision over the principal investigator and the performing organization.

3. Monitor's Project Officer

The individual in the monitoring organization who has direct cognizance of the project and who provides a point of contact with the principal investigator.

4. Project Officer's Telephone Numbers

Enter the commercial telephone number and/or Federal TeleCommunications System telephone number as appropriate.

E. PROJECT ACCOUNTING

1-5. Type of Funding Activity

The method chosen by the funding organization to provide the monetary resources for the project. Provide grant number, contract number or, in the case of an interagency agreement, the name of the funding agency.

6-7. Funding Organization(s)

The organization(s) (Agency, Departmental, or Institutional level) providing part or all of the funds for part or all of the performance or the project. In most cases, the funding agency is the same as the monitoring agency. When there are two or more funding agencies, indicate amount for each separately. Indicate funds as dollars in thousands.

F. PROJECT SCHEDULE

1. Date Project Originated

Enter month and year.

2. Expected End Date

The month and year the project is expected to terminate. If there is no

SECTION II - GENERAL CATEGORIES

A. TYPE OF ACTIVITY

Check one or more activities as appropriate to your project. If some combination of activities 1 through 11 does not adequately describe your project, use item 12 to specify.

B. RELATED ENERGY SOURCE

This subsection categorizes your project by its relationship to an energy source. Use percentages to indicate emphasis. Examples: If your project concerns handling of waste heat from power plants, it may apply to Fossil Fuels/General (25%), Nuclear Fuels/General (25%), Solar/General (25%), and Geothermal/General (25%). If the project involves utilization or conversion of waste heat, it may apply only to Conservation/General (100%). If the project relates to general environmental impacts and is applicable to all energy sources, you should categorize the project as "ALL OF THE ABOVE" (100%).

C. STAGE OF ENERGY CYCLE

This subsection categorizes your project by its relation to energy production cycle stages. Use percentage(s) to indicate the stage(s) of the cycle which your project emphasizes. If your project encompasses two or more stages, indicate appropriate percentages for the several stages. If your project is general in nature and is supportive of all cycles or processes, mark 100% in the "ALL OF THE ABOVE" box.

D. POLLUTANTS CONSIDERED

Check those contaminants pertaining to your project.

E. ENVIRONMENTAL BACKGROUND

If your project is concerned with the environmental background in which pollutants are deposited, through which pollutants are transported, or in which pollutant-affected organisms or ecological systems develop, categorize by checking appropriate circle(s).

F. GEOGRAPHIC REGIONS

If your project has a special relationship or direct applicability to a particular geographic area, check the appropriate circle(s). (See map, Attachment A, for Region definitions.)

G. U. S. COASTLINES

If your project has a special relationship or direct applicability to a particular U. S. Coastline, check the appropriate circle(s). (See map, Attachment A, for Coastline limits.)

H. AQUATIC AREAS

Check the type of body of water to which your study is directly related.

SECTION III - OPERATIONAL SAFETY R&D CATEGORIES

Indicate the type of research and emphasis by percentages. Percentages should total 100%.

SECTION IV - ENVIRONMENTAL CONTROL TECHNOLOGY R&D CATEGORIES

Indicate the type of research and emphasis by percentages. Percentages should total 100%.

SECTION V - BIOMEDICAL AND ENVIRONMENTAL RESEARCH CATEGORIES

Use percentage(s) to indicate project emphasis according to the subcategories listed. The percentages in each subsection should total 100%.

SECTION VI - PROJECT DESCRIPTION

A. DESCRIPTION IN SUMMARY FORM

1. Objective(s)

State project objectives, quantifying where possible (e.g., "demonstrate 95% recovery of sulfur from raw gas with molten salt recycling at a rate of one gallon per minute").

2. Approach

Describe the technical approach to the project, i.e., how the work is to be done.

3. Product/Results

Describe the final products or results expected from the project and those obtained to date. The importance and relevance of the results to energy-related environmental and safety projects should also be indicated.

B. PUBLICATIONS

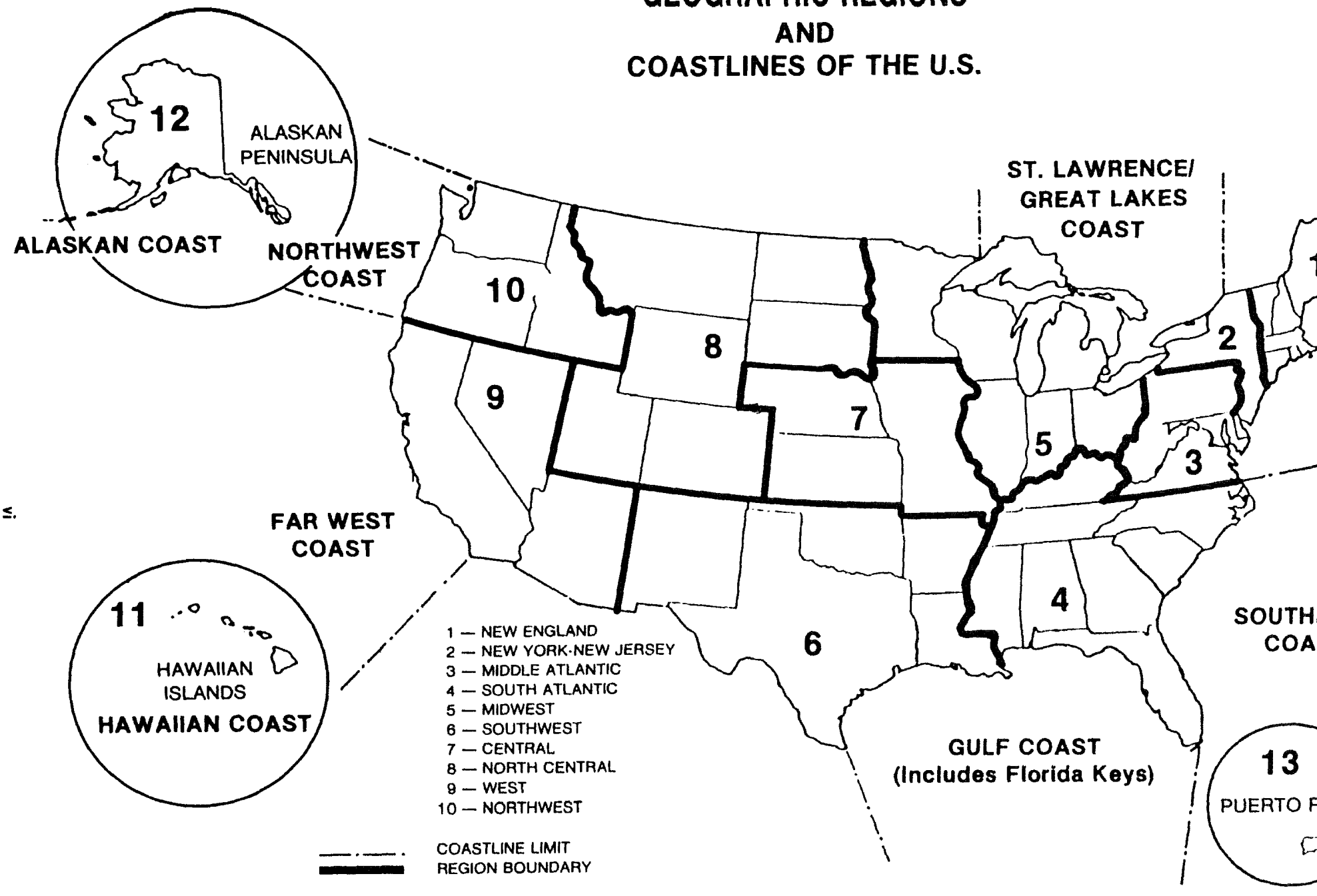
Include all publications in the following reference format.

Reports:	Author(s), "Title," Series No., Publishing Agency or University, date.
Journals:	Author(s), "Title," Journal Name, Vol. No. (Series No.), date.
Books:	Author(s), Title, Publishing Co., Location, date.
Chapters Within Books	Author(s), "Title," in Book Title, Publishing Co., Location, date.

SECTION VII - KEY WORDS

Circle up to six key words that best characterize your project. If the Key Word List is inadequate, provide up to two additional words which describe your project (maximum total eight words). List and define additional words in space provided at the bottom of the page.

GEOGRAPHIC REGIONS
AND
COASTLINES OF THE U.S.



INVENTORY OF FEDERAL ENERGY-RELATED ENVIRONMENTAL AND SAFETY RESEARCH

PROJECT DOCUMENTATION — FY 1978

SECTION I — ADMINISTRATIVE

(lease print in black ink or type)

A. PROJECT TITLE

PROJECT TITLE

	2. PROJECT CONTROL NUMBER	3. DATE QUESTIONNAIRE COMPLETED Month / Year

B. STATUS (Check)

1. ○ NEW PROJECT 2. ○ REVISED PROJECT 3. ○ PROJECT TERMINATED

C. PRINCIPAL INVESTIGATOR

NAME (Last, first, middle initial)

BUSINESS ADDRESS

CITY	4 STATE	5. ZIP

PERFORMING ORGANIZATION (Full name)

TELEPHONE

Area Code

COMMERCIAL ( ) _____ FTS _____

D. PROJECT MONITOR

MONITORING AGENCY(s) (Full name)

MONITORING AGENCY DIVISION OR OFFICE (Full name)

MONITOR'S PROJECT OFFICER (Last, first, middle initial)	4 TELEPHONE
	Area Code COMMERCIAL ( ) _____ FTS _____

E. PROJECT ACCOUNTING

TYPE OF FUNDING ACTIVITY (Check one)

○ Contract No _____

○ Grant No. _____

○ Interagency agreement _____
funding agency

d ○ Agency in-house effort

e ○ EPA "pass-thru" funding

FUNDING ($ thousands)

Funding Organization(s)	FY 78	*Projected FY 79
a.	$	$
b.	$	$

*Only projects associated with Atmospheric Sciences

PROJECT CONTROL NUMBER _____

SECTION II — GENERAL CATEGORIES

(Enter Project Percentage In Applicable Boxes and Check Applicable Circles)

A. TYPE OF ACTIVITY

1. ○ BASIC RESEARCH
2. ○ APPLIED RESEARCH (conducted to fulfill special requirements)
3. ○ LABORATORY SCALE R&D
4. ○ TECHNOLOGY TRANSFER
5. ○ FIELD STUDY
6. ○ PILOT PLANT SCALE R&D
7. ○ FULL SCALE DEMONSTRATION
8. ○ MATHEMATICAL MODEL DEVELOPMENT
9. ○ DATA ANALYSIS/ASSESSMENTS
10. ○ INFORMATION SYSTEMS MANAGEMENT
11. ○ POLICY ANALYSIS
12. ○ OTHER (Specify) _____

B. RELATED ENERGY SOURCE

1. [ ] FOSSIL FUELS (General)
2. [ ] COAL
3. [ ] OIL AND GAS
4. [ ] OIL SHALES AND TAR SANDS
5. [ ] NUCLEAR FUELS (General)
6. [ ] NUCLEAR FISSION
7. [ ] NUCLEAR FUSION
8. [ ] HYDROELECTRIC
9. [ ] GEOTHERMAL
10. [ ] SOLAR
11. [ ] OCEAN THERMAL
12. [ ] BIOMASS
13. [ ] WIND
14. [ ] CONSERVATION
15. [ ] OTHER ADVANCED SYSTEMS (e.g., Magnetohydrodynamics)
16. [ ] ALL OF THE ABOVE

100%

17. ○ NOT APPLICABLE

C. STAGE OF ENERGY CYCLE

1. [ ] EXTRACTION
2. [ ] SECONDARY RECOVERY
3. [ ] TERTIARY RECOVERY
4. [ ] COMBUSTION IN SITU
5. [ ] CONVERSION IN SITU
6. [ ] TRANSPORTATION/TRANSMISSION
7. [ ] STORAGE
8. [ ] PROCESSING
9. [ ] CONVERSION
10. [ ] COMBUSTION — UTILIZATION
11. [ ] WASTE MANAGEMENT
12. [ ] DECONTAMINATION AND DECOMISSIONING
13. [ ] ALL OF THE ABOVE

100%

14. ○ NOT APPLICABLE

D. POLLUTANTS CONSIDERED

1. ○ SULFUR OXIDES
2. ○ NITROGEN OXIDES
3. ○ SULFATES
4. ○ NITRATES
5. ○ CARBON OXIDES
6. ○ HYDROCARBONS
7. ○ PHOTOCHEMICAL OXIDANTS
8. ○ OTHER NOXIOUS GASES
9. ○ PARTICULATES/DUST
10. ○ HEAVY METALS
11. ○ ORGANICS (Excl. Hydrocarbons)
12. ○ RADIATION, IONIZING (Nuclear)
13. ○ RADIATION, NONIONIZING (Infrafred, Microwave)
14. ○ NOISE/VIBRATION
15. ○ HEAT/THERMAL
16. ○ VISUAL AESTHETICS
17. ○ ODOR
18. ○ AGRICULTURAL WASTES
19. ○ URBAN WASTES
20. ○ WASTEWATER — TREATED RESIDUALS
21. ○ SLUDGE/SEDIMENTS
22. ○ SUSPENDED SOLIDS
23. ○ DISSOLVED SOLIDS/SALINITY
24. ○ NUTRIENTS
25. ○ MICROBIOLOGICAL AGENTS
26. ○ PESTICIDES/HERBICIDES
27. ○ OTHER (Specify) _____
28. ○ NOT APPLICABLE

FORM DOE/EV-254
(4-78)

INVENTORY OF FEDERAL ENERGY-RELATED ENVIRONMENTAL AND SAFETY RESEARCH

PROJECT CONTROL NUMBER_____

SECTION II — GENERAL CATEGORIES (Continued)

(Check Appropriate Circles)

E. ENVIRONMENTAL BACKGROUND

1. ○ ATMOSPHERIC
2. ○ TERRESTRIAL
3. ○ FRESHWATER
4. ○ ESTUARINE
5. ○ MARINE
6. ○ NOT APPLICABLE

F. GEOGRAPHIC REGIONS (see instruction & map)

1. ○ NEW ENGLAND
2. ○ NEW YORK -- NEW JERSEY
3. ○ MIDDLE ATLANTIC STATES
4. ○ SOUTH ATLANTIC STATES
5. ○ MIDWEST
6. ○ SOUTHWEST
7. ○ CENTRAL STATES
8. ○ NORTH CENTRAL STATES
9. ○ WEST
10. ○ NORTHWEST
11. ○ HAWAII
12. ○ ALASKA
13. ○ PUERTO RICO
14. ○ CONTINENTAL (all states excluding Alaska, Hawaii)
15. ○ INTERNATIONAL (excluding U.S.)
16. ○ WORLDWIDE (including land & water)
17. ○ NOT APPLICABLE

G. U.S. COASTLINES (see instructions & map)

1. ○ NORTHEAST COAST
2. ○ SOUTHEAST COAST
3. ○ GULF COAST
4. ○ WEST COAST
5. ○ NORTHWEST COAST
6. ○ ALASKAN COAST
7. ○ HAWAIIAN COAST
8. ○ PUERTO RICAN COAST
9. ○ NOT APPLICABLE

H. AQUATIC AREAS

1. ○ DEEP OCEAN
2. ○ CONTINENTAL SHELF
3. ○ LAKE
4. ○ RIVER
5. ○ SURFACE WATERSHED
6. ○ GROUNDWATER
7. ○ IMPOUNDMENT (man-made lake)
8. ○ NOT APPLICABLE

SECTION III — OPERATIONAL SAFETY R&D CATEGORIES (enter %)

A .

RESEARCH TO ENSURE THAT ALL ENERGY-RELATED OPERATIONS ARE CONDUCTED IN A MANNER THAT WILL MINIMIZE RISKS TO THE HEALTH AND SAFETY OF THE PUBLIC AND EMPLOYEES, AND WILL PROVIDE ADEQUATE PROTECTION OF PROPERTY AND THE ENVIRONMENT — INCLUDES:

1. [ ] ENVIRONMENTAL, SAFETY, HEALTH ASSURANCE MEASUREMENT AND MONITORING
2. [ ] ENVIRONMENTAL, SAFETY, HEALTH STANDARDS AND CRITERIA
3. [ ] ENVIRONMENTAL, SAFETY, HEALTH SUPPORT AND ASSISTANCE

SECTION IV — ENVIRONMENTAL CONTROL TECHNOLOGY R&D CATEGORIES (enter %)

A.

ACTIVITIES DIRECTED AT RESEARCH, DEVELOPMENT AND DEMONSTRATION OF PROCESSES, PROCEDURES, SYSTEMS, SUBSYSTEMS, AND STRATEGIES WHICH DIRECTLY OR INDIRECTLY ELIMINATE, MINIMIZE, OR MITIGATE ENVIRONMENTAL IMPACTS — INCLUDING:

1. [ ] AIR QUALITY CONTROLS
2. [ ] SOLID WASTE MANAGEMENT AND LAND RECLAMATION
3. [ ] WATER CONTROL AND PROTECTION

FORM DOE/EV-294
(4-78)

INVENTORY OF FEDERAL ENERGY-RELATED ENVIRONMENTAL AND SAFETY RESEARC

PROJECT CONTROL NUMBER_____

SECTION V — BIOMEDICAL AND ENVIRONMENTAL RESEARCH CATEGORIES (enter %)

A. CHARACTERIZATION, MEASUREMENT, AND MONITORING

1 [ ] CHARACTERIZATION - BASELINE MEASUREMENTS
2 [ ] CHARACTERIZATION - OPERATING SITE MEASUREMENTS
3 [ ] ADVANCED CONCEPTS, COMPONENTS AND SYSTEMS
4 [ ] APPLIED SYSTEMS
5 [ ] QUALITY ASSURANCE AND STANDARDS
6 [ ] OCCUPATIONAL HEALTH MONITORING
7 [ ] PUBLIC HEALTH MONITORING

100%

○ NOT APPLICABLE

B. PHYSICAL AND CHEMICAL PROCESSES AND EFFECTS

1 [ ] ENVIRONMENTAL TRANSPORT, DISPERSION AND DIFFUSION
2 [ ] PHYSICAL AND CHEMICAL TRANSFORMATION OF POLLUTANTS
3 [ ] PROCESSES BY WHICH POLLUTANTS ARE REMOVED FROM LAND, AIR AND WATER
4 [ ] POLLUTANT EFFECTS ON MATERIALS
5 [ ] TERRESTRIAL DISTURBANCES RESULTING FROM RESOURCE EXTRACTION
6 [ ] METEOROLOGICAL/CLIMATIC EFFECTS OF HEAT, MOISTURE AND POLLUTANT RELEASES
7 [ ] RESEARCH ON MEASUREMENT OF POLLUTANTS IN ENVIRONMENTAL MEDIA
8 [ ] RESEARCH TO DETERMINE ULTIMATE ENVIRONMENTAL FATE

100%

○ NOT APPLICABLE

C. INTEGRATED ASSESSMENT

1 [ ] ENVIRONMENTAL INFORMATION SYSTEMS
2 [ ] INTEGRATED HEALTH/ECOLOGICAL ASSESSMENT
3 [ ] TECHNOLOGY IMPACT ASSESSMENT
4 [ ] REGIONAL ENVIRONMENTAL ASSESSMENT
5 [ ] NATIONAL ENVIRONMENTAL ASSESSMENT

D. HEALTH EFFECTS

1 [ ] CARCINOGENESIS
2 [ ] TERATOGENESIS
3 [ ] MUTAGENESIS
4 [ ] METABOLIC/ELIMINATION
5 [ ] HUMAN DAMAGE, REPAIR AND RECOVERY
6 [ ] RENAL/HEPATIC
7 [ ] IMMUNOLOGIC/HEMATOLOGIC
8 [ ] CARDIOVASCULAR
9 [ ] GASTROINTESTINAL
10 [ ] MUSCULAR/SKELETAL
11 [ ] RESPIRATORY
12 [ ] NEUROLOGIC/NEUROBEHAVIORAL
13 [ ] NONHUMAN DOSE-EFFECTS STUDIES
14 [ ] HUMAN HAZARD/RISK ASSESSMENT
15 [ ] EPIDEMIOLOGICAL STUDIES

100%

○ NOT APPLICABLE

E. ECOLOGICAL/BIOLOGICAL PROCESSES AND EFFECTS

1 [ ] STRUCTURE/FUNCTION/MANAGEMENT OF ECOLOGICAL BIOLOGICAL SYSTEMS
2 [ ] POLLUTANT FATE/CYCLING IN ECOLOGICAL BIOLOGICAL SYSTEMS
3 [ ] ECOLOGICAL/BIOLOGICAL RESPONSE/RECOVERY FROM PHYSICAL DISTURBANCES (i.e. Thermal Changes)
4 [ ] ECOLOGICAL/BIOLOGICAL RESPONSE/RECOVERY FROM CHEMICAL DISTURBANCES
5 [ ] ECOLOGICAL/BIOLOGICAL RESPONSE/RECOVERY FROM BIOLOGICAL DISTURBANCES

100%

○ NOT APPLICABLE

FORM DOE/EV-294
(4-78)

INVENTORY OF FEDERAL ENERGY-RELATED ENVIRONMENTAL AND SAFETY RESEARCH

PROJECT CONTROL NUMBER_____

SECTION VI — PROJECT DESCRIPTION

A. DESCRIPTION IN SUMMARY FORM (200 words total). TO INCLUDE THE FOLLOWING INFORMATION ABOUT THE PROJECT:

1. STATEMENT OF PROJECT OBJECTIVES, 2. APPROACH CHOSEN AS PATH TO OBJECTIVE(S) 3. STATEMENT OF PRODUCT OR RESULTS EXPECTED IN THE FUTURE AND THOSE OBTAINED TO DATE (Include all Publications separately in space provided).

B. PUBLICATIONS:

INVENTORY OF FEDERAL ENERGY-RELATED ENVIRONMENTAL AND SAFETY RESEAR

PROJECT CONTROL NUMBER _____

SECTION VII — KEY WORDS (Circle)

Aerosols
Aging
Agriculture
Americium
Animals
Antimony
Arsenic
Atmosphere
Bacteria
Biochemistry
Biomass
Biosynthesis
Blood
Bones
Boron
Brain
Cadmium
Calcium
Carcinogenesis
Cells
Cesium
Chlorine
Chromium
Climates
Combustion
Computers
Construction
Copper
Demography
Digestive System
Diseases
DNA
Ecology
Economics
Ecosystems
Effluents
Electrons
Emissions
Emotional Stress
Endocrine System
Engineering
Enzymes
Epidemiology
Excretory System
Exertion
Fate
Fauna
Fishes
Flora
Foods
Forests
Freshwater
Fungi
Gamma Ray
Genetics
Geology
Ground Water
Hydrocarbons
Hydrology
Immunology
Information Systems
Infrafred
Ingestion
Inhalation
Insects
Instrumentation
Invertebrates
Iodine
Larvae
Lead
Liver
Lungs
Magnetism
Manganese
Marine
Mathematical Models
Medicine
Membranes
Mercury
Metabolism
Microorganisms
Mining
Mutagenesis
Mutation
Neoplasms
Nervous System
Neurology
Neutrons
Nickel
Nitrogen
Oil Spills
Oxidation
Ozone
Packaging
Particulates
Pathogenesis
Pharmacology
Photons
Physical Stress
Phytoplankton
Plumes
Plutonium
Population Dynamics
Power Plants
Protein
Radiation
Radioactivity
Radioisotopes
Radionuclides
Reactors
Reclamation
Reproduction
Respiration
Risk Assessment
RNA
Sabotage
Safety
Sampling
Screening
Scrubber
Sediments
Seismology
Selenium
Sewage
Shipping
Skin
Socioeconomics
Sociology
Soils
Statistics
Sulfur
Surface Water
Surveillance
Synergism
Synthesis
Teratology
Terminal Storage
Toxicology
Transportation
Viruses
Vertebrates
Zooplankton

Additional Key Words and Definitions

sage is desired.

CS1	RELATIONAL FOLLOWS ARITHMETIC OR LOGICAL
CS2	LOGICAL FOLLOWS LOGICAL
CS3	VALUE WAS REQUIRED
CS12	ARITHMETIC OVERFLOW IN NUMBER, OR NON NUMERIC CHAR
CS15	UNEXPECTED LEFT OR RIGHT PAREN
CS16	MORE RIGHT THAN LEFT PARENS
CS17	MORE RIGHT THAN LEFT PARENS IN A BASIC SELECTOR GROU
CS18	NEEDED AN ATTRIBUTE NAME
CS19	UNBALANCED PARENS IN AN ATTRIBUTE GROUPING
CS20	UNBALANCED PARENS IN A COMMAND
CS21	HIT A NULL PAREN GROUP IE ( )
CS22	A NOT FOLLOWS AN ARITHMETIC RELATIONAL
CS23	EXPRESSIONS NESTED TOO DEEPLY
CS24	INVALID COMMAND
CS26	BAD # COMMAND
CS31	DATA SET NOT OPEN
CS35	TOO MANY ATTRIBUTES IN A SORT DESCRIPTION
CS37	CT REQUIRES TEXT ATTRIBUTE
CS38	ILLEGAL OR REPEATED PARAMETER
CS43	FUNCTION HAS NO EXPRESSION
CS45	TEXT IN ARITHMETIC EXPRESSION
CS46	UNEXPECTED PERIOD
CS47	UNEXPECTED OPERATOR OR RIGHT PAREN
CS48	NULL TEXT LITERAL
CS49	UNBALANCED PARENTHESES
CS50	UNRECOGNIZED WORD
CS51	DATA NOT OF EXPECTED TYPE
CS52	UNEXPECTED LEFT PAREN
CS55	NOT AN INTEGER
CS56	OUT OF LEGAL RANGE
CS57	COMMAND OUT OF CONTEXT (EG. REPORTS)
CS59	CHARACTER NOT ALLOWED HERE
CS60	ATTRIBUTE AS VALUE NOT ALLOWED IN FIND
CS61	ATTRIBUTE REFERENCED TWICE
CS62	UNKEYED ATTRIBUTE
CS63	VALUE TOO LARGE
CS65	NEEDED LOGICAL OR ATTRIBUTE
CS66	FILE NOT FOUND
CS69	EXTRA WORK IN COMMAND
CS70	ATTRIBUTE PROTECTED FROM ADD OR CHANGE
CS72	EXPECTED A RESERVED WORD
CS77	BAD RELATIONAL EG. EQ GT
CS78	NOT A DATA SYMBOL

304 TOO MANY SORT FIELDS

APPENDIX C

DATA SET ATTRIBUTES

project identifier

ATTRIBUTE ABSTRACT ABBREV ABS TEXT COL 7 306
project description

ATTRIBUTE ACTIVITY ABBREV AT TEXT COL 307 356
type of activity

ATTRIBUTE ADDR ABBREV A TEXT COL 357 407
address of principal investigator

ATTRIBUTE AFFIL ABBREV AF TEXT COL 408 459
name of performing organization

ATTRIBUTE AGENCYA ABBREV AA TEXT KEYED COL 460 464
first funding agency

ATTRIBUTE AGENCYB ABBREV AB TEXT KEYED COL 465 469
second funding agency

ATTRIBUTE AGENCYC ABBREV AC TEXT KEYED COL 470 477
third funding agency

ATTRIBUTE AREAS ABBREV AR TEXT COL 478 507
aquatic areas

ATTRIBUTE BACK_GND ABBREV BG TEXT COL 508 527
environmental background

ATTRIBUTE BERHEAD ABBREV BH TEXT COL 528 587
main category titles in Section V

ATTRIBUTE CITY ABBREV CI TEXT KEYED COL 588 597
city of principal investigator

ATTRIBUTE COAST ABBREV CS TEXT COL 598 632
U.S. coast lines

ATTRIBUTE CPL_DATE ABBREV CD TEXT COL 633 642
date project should be completed/ended

ATTRIBUTE DATE1 ABBREV D TEXT COL 643 650
date questionnaire completed

ATTRIBUTE ECOBIO ABBREV EB TEXT COL 651 750
ecological/biological processes and effects

ATTRIBUTE ENERCYCL ABBREV EC TEXT COL 751 790
stage of energy cycle

ATTRIBUTE ENSOURCE ABBREV ES TEXT COL 791 820
type of energy source

projected FY79 project funding

ATTRIBUTE GEN_CAT ABBREV GC TEXT COL 925 979
name of applicable general categories checked

ATTRIBUTE HEADER ABBREV H TEXT COL 980 989
text set to "BER" (Biomedical and Environmental Research) if Section V is answered, "ECT" (Environmental Control Technology) if Section IV is answered, "OS" (Operational Safety) if Section III is answered, and "UNSPECIFIED" if none of the Sections III, IV, or V are answered

ATTRIBUTE HEALTH ABBREV HL TEXT COL 990 1054
health effects

ATTRIBUTE INTEG ABBREV IG TEXT COL 1055 1134
integrated assessment

ATTRIBUTE LOG_AGAB ABBREV LA TEXT KEYED COL 1135 1151
log agency abbreviation

ATTRIBUTE MACTIV ABBREV MV TEXT COL 1152 1164
multiactivities

ATTRIBUTE MCYCLE ABBREV MC TEXT COL 1165 1181
multienergy cycles

ATTRIBUTE MEASUR ABBREV MS TEXT COL 1182 1261
name of characterization, measurement, and monitoring category

ATTRIBUTE MON_AGAB ABBREV MA TEXT KEYED COL 1262 1270
monitoring agency abbreviation

ATTRIBUTE MONITOR ABBREV M TEXT KEYED COL 1271 1290
monitor's project officer

ATTRIBUTE MPOLLUT ABBREV MP TEXT COL 1291 1305
multipollutants

ATTRIBUTE MSOURCE ABBREV MR TEXT COL 1306 1323
multienergy source

ATTRIBUTE OS TEXT COL 1324 1408
Name of operational safety category

ATTRIBUTE PHONE ABBREV P TEXT KEYED COL 1409 1428
phone number of project monitor

ATTRIBUTE PHYS ABBREV PY TEXT COL 1429 1568
physical and chemical processes and effects

ATTRIBUTE PI TEXT COL 1569 1588
principal investigator

ATTRIBUTE POLLUT ABBREV PT TEXT COL 1589 1638
pollutant

ATTRIBUTE PROJ_NO ABBREV PN TEXT COL 1639 1658
project control number

ATTRIBUTE PUBL ABBREV PU TEXT COL 1659 2118
publications

ATTRIBUTE RECID ABBREV R INTEGER KEYED COL 2119 2122
ADSEP record identifier

ATTRIBUTE REGION ABBREV RG TEXT COL 2123 2142
geographic region

ATTRIBUTE ST_DATE ABBREV SD TEXT COL 2143 2150
date project originated

ATTRIBUTE STATE ABBREV S TEXT KEYED COL 2151 2157
state of principal investigator

ATTRIBUTE STATUS ABBREV SS TEXT KEYED COL 2158 2177
current project status

ATTRIBUTE TELE ABBREV T TEXT KEYED COL 2178 2207
telephone number of principal investigator

ATTRIBUTE TITLE ABBREV TI TEXT COL 2208 2267
project title

ATTRIBUTE TYPE ABBREV TY TEXT COL 2268 2292
type of funding activity

ATTRIBUTE ZIP ABBREV Z INTEGER KEYED COL 2293 2297
zip code of principal investigator

DATA SET TWO

ATTRIBUTE LOG_NO ABBREV L INTEGER KEYED COL 1 6
project identifier

ATTRIBUTE KEYFIELD ABBREV K TEXT KEYED COL 7 11

ATTRIBUTE

FUND2 ABBREV F2 REAL COL 50 56
projected FY79 project funding

DATA SET THREE

ATTRIBUTE

LOG_NO ABBREV L INTEGER KEYED COL 1 6
project identifier

ATTRIBUTE

KEYWORD ABBREV K TEXT KEYED COL 7 48
keyword and funding agency

ATTRIBUTE

FY78 TEXT KEYED COL 49 61
funding for FY78 for specific funding agencies. If this field is blank, then KEYWORD contains a keyword; if this field is not blank, then KEYWORD contains a funding agency

ATTRIBUTE

LOG_AGAB ABBREV LA TEXT KEYED COL 62 78
log agency abbreviation

ATTRIBUTE

MON_AGAB ABBREV MA TEXT KEYED COL 79 87
monitoring agency abbreviation

ATTRIBUTE

FUND1 ABBREV F1 REAL COL 88 94
total FY78 project funding

ATTRIBUTE

FUND2 ABBREV F2 REAL COL 95 101
projected FY79 project funding

APPENDIX D

AGENCY ABBREVIATIONS

DOC/ASEA	Assistant Secretary — Environmental Affairs
DOC/NBS	National Bureau of Standards
DOC/NOAA	National Oceanographic and Atmospheric Administration
DOC/OWRA	Old West Regional Action Planning Commissio
DOD	Department of Defense
DOE	Department of Energy
DOE/ANL	Argonne National Laboratory
DOE/AO	Albuquerque Operations Office
DOE/BNL	Brookhaven National Laboratory
DOE/C	Assistant Administrator — Conservation
DOE/CO	Chicago Operations Office
DOE/CSA	Assistant Administrator — Conservation and S Application
DOE/DP	Assistant Secretary — Defense Programs
DOE/EIA	Administrator — Energy Information Administr
DOE/EPA Pass Thru	EPA Pass Thru
DOE/ER	Director Office of Energy Research
DOE/ERC	Energy Research Center
DOE/ET	Assistant Secretary — Energy Technology
DOE/FE	Assistant Administrator — Fossil Energy
DOE/GJO	Grand Junction Office
DOE/H	Administration/Headquarters
DOE/IA	Assistant Secretary — International Affairs
DOE/IIR	Assistant Secretary — Intergovernmental and Institutional Relations
DOE/IO	Idaho Operations Office
DOE/LASL	Los Alamos Scientific Laboratory
DOE/LBL	Lawrence Berkeley Laboratory
DOE/LLL	Lawrence Livermore Laboratory
DOE/NE	Assistant Administrator — Nuclear Energy
DOE/NO	Nevada Operations Office
DOE/ORNL	Oak Ridge National Laboratory
DOE/ORO	Oak Ridge Operations Office
DOE/PA	Assistant Administrator — Planning and Analy
DOE/PE	Assistant Secretary — Policy and Evaluation
DOE/PNL	Pacific Northwest Laboratory
DOE/RA	Assistant Secretary — Resource Applications
DOE/RO	Richland Operations Office
DOE/SGE	Assistant Administrator — Solar, Geothermal, Advanced Energy Systems
DOE/SFO	San Francisco Operations Office
DOE/SRO	Savannah River Operations Office

DOT	Department of Transportation
DOT/ASESC	Assistant Secretary — Environment, Safety, and Consumer Affairs
DOT/FAA	Federal Aviation Administration
DOT/FHA	Federal Highway Administration
DOT/FRA	Federal Railroad Administration
DOT/NHTSA	National Highway Transportation Safety Administration
DOT/NTSB	National Transportation Safety Board
DOT/UMTA	Urban Mass Transit Administration
EPA	U.S. Environmental Protection Agency
EPA/A	Environmental Monitoring and Support Laboratory Cincinnati
EPA/B	Industrial Environmental Research Laboratory — Cincinnati
EPA/C	Municipal Environmental Research Laboratory — Cincinnati
EPA/D	Health Effects Research Laboratory — Cincinnati
EPA/E	Environmental Monitoring and Support Laboratory Research Triangle Park
EPA/F	Industrial Environmental Research Laboratory — Research Triangle Park
EPA/G	Environmental Sciences Research Laboratory — Research Triangle Park
EPA/H	Health Effects Research Laboratory — Research Triangle Park
EPA/J	Environmental Monitoring and Support Laboratory Las Vegas
EPA/K	Environmental Research Laboratory — Athens
EPA/L	Environmental Research Laboratory — Ada
EPA/M	Environmental Research Laboratory — Corvalis
EPA/N	Environmental Research Laboratory — Duluth
EPA/P	Environmental Research Laboratory — Narraganset
EPA/Q	Environmental Research Laboratory — Gulf Breeze
EPA/R	
EPA/S	
EPA/T	
EPA/U	
EPA/V	Department of the Assistant Secretary — Energy
EPA/X	Department of the Assistant Secretary — Health
EPA/Z	Support Office — Research Triangle Park
EPAI	Region I — Boston
EPAII	Region II — New York

EPAX	Region X — Seattle
FEA	Federal Energy Administration
HEW	Department of Health, Education, and Welfare
HEW/ASH	Assistant Secretary — Health
HEW/NAMDD	National Institute of Arthritis, Metabolism, an Digestive Diseases
HEW/NCHHD	National Institute of Child Health and Human Development
HEW/NCI	National Cancer Institute
HEW/NDR	National Institute of Dental Research
HEW/NGMS	National Institute of General Medical Sciences
HEW/NHLB	National Heart, Lung, and Blood Institute
HEW/NIA	National Institute on Aging
HEW/NIEHS	National Institute of Environmental Health Scie
HEW/NIEHS/ADG	Office of Associate Director for Genetics
HEW/NIEHS/BB	Biometry Branch
HEW/NIEHS/EBC	Environmental Biology and Chemistry Branch
HEW/NIEHS/HHA	Office of Health Hazards Assessment
HEW/NIEHS/LBG	Laboratory of Biochemical Genetics
HEW/NIEHS/LBNT	Laboratory of Behavioral and Neurological Toxicology
HEW/NIEHS/LEB	Laboratory of Environmental Biophysics
HEW/NIEHS/LEM	Laboratory of Environmental Mutagenesis
HEW/NIEHS/LET	Laboratory of Environmental Toxicology
HEW/NIEHS/LP	Laboratory of Pharmacology
HEW/NIEHS/LPFT	Laboratory of Pulmonary and Functional Toxicc
HEW/NIEHS/LPK	Laboratory of Pharmacokinetics
HEW/NIEHS/P01ES	Extramural Program — P01ES Series
HEW/NIEHS/R01ES	Extramural Program — R01ES Series
HEW/NIEHS/1R01ES	Extramural Program — 1 R01ES Series
HEW/NIEHS/R23ES	Extramural Program — R23ES Series
HEW/NIH	National Institutes of Health (Division of Rese Resources)
HEW/HEW/NNCDS	National Institute of Neurological and Communi Disease and Stroke
HEW/NIOSH	National Institute for Occupational Safety and
HUD	Department of Housing and Urban Development
NASA	National Aeronautics and Space Administration
NRC	Nuclear Regulatory Commission
NSF	National Science Foundation
NSF/OR	Director of Research

MONITORING AGENCY ABBREVIATIONS

ACS	American Cancer Society
AL	Ames Laboratory
APPA	American Public Power Association
AS	Aquatic Sciences, Inc.
CEQ	Council on Environmental Quality
CSM	Colorado School of Mines
CU	University of Colorado
DO	Dow Chemical Company
DOC	Department of Commerce
DOC/NBS	National Bureau of Standards
DOD	Department of Defense
DOE	Department of Energy
DOE/ANL	Argonne National Laboratory
DOE/AO	Albuquerque Operations Office
DOE/BNL	Brookhaven National Laboratory
DOE/BPNL	Battelle Pacific Northwest Laboratories
DOE/CO	Chicago Operations Office
DOE/CRBR	Clinch River Breeder Reactor Plant Proje
DOE/GJO	Grand Junction Office
DOE/IO	Idaho Operations Office
DOE/LASL	Los Alamos Scientific Laboratory
DOE/LERC	Laramie Energy Research Center
DOE/LLL	Lawrence Livermore Laboratory
DOE/NO	Nevada Operations Office
DOE/NYHSL	New York Health Services Laboratory
DOE/ORNL	Oak Ridge National Laboratory
DOE/ORO	Oak Ridge Operations Office
DOE/PERC	Pittsburgh Energy Research Center
DOE/RO	Richland Operations Office
DOE/SFO	San Francisco Operations Office
DOE/SRO	Savannah River Operations Office
DOI	Department of the Interior
DOI/BLM	Bureau of Land Management
DOI/BM	Bureau of Mines
DOI/BPA	Bonneville Power Administration
DOI/BR	Bureau of Reclamation

EPRI	Electric Power Research Institute
FDA	Food and Drug Administration
FEA	Federal Energy Administration
FU	University of Florida
GTC	General Technologies Corporation
GU	University of Georgia
HEW	Department of Health, Education, and Welfare
HEW/NAMDD	National Institute of Arthritis, Metabolism, an Digestive Diseases
HEW/NCHHD	National Institute of Child Health and Human Development
HEW/NCI	National Cancer Institute
HEW/NDR	National Institute of Dental Research
HEW/NGMS	National Institute of General Medical Sciences
HEW/NHLB	National Heart, Lung, and Blood Institute
HEW/NIEHS	National Institute of Environmental Health Scie
HEW/NIH	National Institutes of Health
HEW/NIOSH	National Institute for Occupational Safety and
HEW/NNCDS	National Institute of Neurological and Communic Disease and Stroke
HEW/PHS	Public Health Service
HRI	Health Research, Inc.
HU	University of Hawaii
HUD	Department of Housing and Urban Development
LSU	Louisiana State University
MESA	Mining Enforcement and Safety Administration
MIT	Massachusetts Institute of Technology
NASA	National Aeronautics and Space Administration
NAVY	Department of the Navy
NOAA	National Oceanic and Atmospheric Administration
NRC	Nuclear Regulatory Commission
NSF	National Science Foundation
NYSDH	New York State Department of Health
OSU	Oregon State University
RIU	University of Rhode Island

TTU	Texas Tech University
TU	University of Texas
TVA	Tennessee Valley Authority
UCB	University of California, Berkeley
USC	University of Southern California
USDA	Department of Agriculture
USDA/CSRS	Cooperative State Research Service
USDA/FS	Forest Service
USU	Utah State University
WHOI	Woods Hole Oceanographic Institute

FUNDING AGENCY ABBREVIATIONS

Agency A

DOC	Department of Commerce
DOC/NBS	National Bureau of Standards
DOD	Department of Defense
DOE	Department of Energy
DOI	Department of the Interior
DOI/BLM	Bureau of Land Management
DOI/FWS	Fish and Wildlife Service
DOI/USGS	U.S. Geological Survey
DOL	Department of Labor
DOT	Department of Transportation
EPA	U.S. Environmental Protection Agency
EPRI	Electric Power Research Institute
FEA	Federal Energy Administration
FHA	Federal Housing Association
HEW	Department of Health, Education, and Welfare
HEW/NCI	National Cancer Institute
HEW/NIEHS	National Institute of Environmental Health
HEW/NIH	National Institutes of Health
HEW/NIOSH	National Institute for Occupational Safety

TVA	Tennessee Valley Authority
USAF	U.S. Air Force
USCG	U.S. Coast Guard
USDA	Department of Agriculture

Agency B

AGA	American Gas Association
CSMRI	Colorado School of Mines Research Institute
DOC	Department of Commerce
DOD	Department of Defense
DOE	Department of Energy
DOI	Department of the Interior
DOI/BLM	Bureau of Land Management
DOI/FWS	Fish and Wildlife Service
DOT	Department of Transportation
EPA	U.S. Environmental Protection Agency
EPRI	Electric Power Research Institute
INCO	International Nickel Company
NOAA	National Oceanographic and Atmospheric Admin
NRC	Nuclear Regulatory Commission
NSF	National Science Foundation
OGA	Other government agencies
SWF	Southwest Foundation for Research and Educat
TVA	Tennessee Valley Authority
USN	U.S. Navy

Agency C

DOE	Department of Energy
DOI/FWS	Department of the Interior/Fish and Wildlife
EPA	U.S. Environmental Protection Agency

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2580 RECS FOUND.
* @M1
2114 RECS FOUND.
IN DATA SET 1.
* SAVE FOSSIL
* @D2
IN DATA SET 2.
* FIND K BET IIB5 IIB7
1090 RECS FOUND.
* @M1
995 RECS FOUND.
IN DATA SET 1.
* SAVE NUCLEAR
* @D2
IN DATA SET 2.
* FIND K IIB8
45 RECS FOUND.
* @M1
45 RECS FOUND.
IN DATA SET 1.
* SAVE HYDRO
* @D2
IN DATA SET 2.
* FIND K IIB9
82 RECS FOUND.
* @M1
82 RECS FOUND.
IN DATA SET 1.
* SAVE GEOTHER
* @D2
IN DATA SET 2.
* FIND K IIB10
107 RECS FOUND.
* @M1
107 RECS FOUND.
IN DATA SET 1.
* SAVE SOLAR
* @D2
IN DATA SET 2.
* FIND K IIB14
131 RECS FOUND.
* @M1
131 RECS FOUND.
IN DATA SET 1.
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* SAVE MULTI
* @D2
IN DATA SET 2.
* FIND K IIB15
30 RECS FOUND.
* @M1
30 RECS FOUND.
IN DATA SET 1.
* SAVE OTHER
* FIND FILE FOSSIL AND FILE CONSER
131 RECS FOUND.
* TY TOT FUND1 FORMAT "FY78 FUNDING FOR PROJECTS RELATING TO" -
 # "FOSSIL FUELS AND CONSERVATION" / P$(9).9 END.
FY78 FUNDING FOR PROJECTS RELATING TO FOSSIL FUELS AND CONSERVATION
   $23382.0
* FIND FILE SOLAR AND FILE GEOTHER
23 RECS FOUND.
* SORT AFFIL PI
* TY AFFIL PI TITLE FORMAT / "AFFILIATION:" S66 / "INVESTIGATOR" &
 # S65 / "TITLE:" S72 / END.

AFFILIATION:AMES LAB., IA
INVESTIGATOR:YEUNG, E.S.
TITLE:LASERS IN ANALYTICAL CHEMISTRY

AFFILIATION:ARGONNE NATIONAL LAB., IL
INVESTIGATOR:INOKUTI, M.
TITLE:MOLECULAR PHYSICS AND CHEMISTRY BASIC TO ENVIRONMENTAL RESEA

AFFILIATION:ARGONNE NATIONAL LAB., IL
INVESTIGATOR:LEPPERT, G.
TITLE:DECENTRALIZED ENERGY TECHNOLOGIES

AFFILIATION:CALIFORNIA UNIV., SAN FRANCISCO. LAB. OF RADIOBIOLOG
INVESTIGATOR:CLEAVER, J.E.
TITLE:MAMMALIAN CELL CULTURE SYSTEMS FOR MOLECULAR STUDIES OF MUTA
```